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Andrew Nicholas Dames

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EXAMINER

MAYE, AYUB A

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/565,026	Applicant(s) DAMES, ANDREW NICHOLAS	
	Examiner AYUB MAYE	Art Unit 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 November 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22,23,27-33,36,37 and 39-50 is/are pending in the application.
- 4a) Of the above claim(s) 24-26,34,35 and 38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22,23,27-33,36,37 and 39-50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 46-48 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 22-23, 27-33, 36-37, 39-45, and 49-50 have been considered but are moot in view of the new ground(s) of rejection.

Election/Restrictions

Newly submitted claims 46-48 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: These claims set forth distinct feature that were not present in the original claims such as three actuators, at least three flexures, four actuators, and at least four flexures. Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 46-48 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 44-45 and 50 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter

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which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Wherein said optical element comprises a forward portion and rearward portion, said optical element further comprising a counterweight portion extending rearwardly and surrounding said flexures. The subject matter is not properly described in the specification.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 22-23, and 44-45 are rejected under 35 U.S.C. 102(b) as being anticipated by Oosterwijk et al (WO 98/47035).

For claim 22, Oosterwijk teaches that an optical element positioning arrangement, comprising a optical element (2 as shown in fig.3), first and second actuators (7 as shown in fig.3), a first flexure (5 as shown in fig.3) located between said first actuator (7 as shown in fig.3) and said optical element (2 as shown in fig.3) and a second flexure (5 as shown in fig.3) located between said second actuator (7 as shown in fig.3) and said optical element (2 as shown in fig.3), whereby when said first actuator

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(7 as shown in fig.3) is actuated any displacement generated is transmitted via a flexure (5 as shown in fig.3) to said optical element (2 as shown in fig.3) and provided that said second actuator's displacement differs from the displacement of said first, said optical element is caused to swing, wherein said actuators (7 as shown in fig.3) are spaced adjacent to one another and placed substantially parallel to one another.

For claim 23, Oosterwijk teaches that an optical element positioning arrangement (fig.1), comprising an optical element (2 as shown in fig.3), at least two actuators (7 as shown in fig.3) acting in the Z direction, at least two flexures (5 as shown in fig.3) located between at least two actuators (7 as shown in fig.3) with each actuator having a central axis along its length (7 as shown in fig.3) and said optical element (2 as shown in fig.3), whereby when a first actuator (7 as shown in fig.3) is actuated any displacement generated is transmitted via a flexure to said optical element (2 as shown in fig.3) and provided that a second actuator's displacement differs from the displacement of said first actuator (7 as shown in fig.3), said optical element (2 as shown in fig.3) is caused to swing; wherein the points of attachment between said flexures (5 as shown in fig.3) and said actuators (7 as shown in fig.3) are located inwards from the central axes of said actuators (7 as shown in fig.3), whereby the achievable swing is greater than when the points of attachment between said flexures (5 as shown in fig.3) and said actuators are located along the central axes (7 as shown in fig.3).

For claims 44 and 45, Oosterwijk teaches that wherein said optical element (2 as shown in fig.3) comprises a forward portion and a rearward portion, said optical element

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(2 as shown in fig.3) further comprising a counterweight portion extending rearwardly and surrounding said flexures (5 as shown in fig.3).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 27-33, 36-37, 39-43 and 49-50 rejected under 35 U.S.C. 103(a) as being unpatentable over Oosterwijk et al (WO 98/47035) in view of Shimizu et al (4666273).

For claim 27, Oosterwijk teaches that a laser marking system (20 as shown in fig.1), comprising an optical element (2 as shown in fig.3) for directing the light beam used for marking a substrate (26 as shown in fig.1); and an actuator (7 as shown in fig.3) for displacing the optical element; wherein the system comprises a connection between said actuator (7 as shown in fig.3) and said optical element to transmit

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movement from said actuator to said optical element (2 as shown in fig.3) and a flexure (5 as shown in fig.3) for supporting the optical element whereby when an actuator is actuated the optical element is caused to swing (page 10, lines 1-26).

For claim 28, Oosterwijk teaches that wherein the optical element (2 as shown in fig.3) directs light onto a divergent lens (106 and 107 as shown in fig.7) located between the substrate (26 as shown in fig.1) to be marked and the optical element (2 as shown in fig.3). For claim 29, Oosterwijk teaches that wherein the optical element (2 as shown in fig.3) directs light onto a convergent lens (106 and 107 as shown in fig.7) located between the substrate (26 as shown in fig.1) to be marked and the optical element. For claim 30, Oosterwijk teaches that a post-spot camera for monitoring the marking and means for comparing the values obtained by the camera with pre-determined levels and adjusting the marking parameters if necessary (page 5, lines 1-20) examiner notes CCD is type of camera sensor. For claim 31, Oosterwijk teaches that a photo-detector set to monitor the marking (page 5, lines 1-10). For claim 32, Oosterwijk teaches that means for measuring the marking distance and adjusting the marking parameters of the system in accordance with the distance (page 5, lines 1-20). For claim 33, Oosterwijk teaches that means for measuring the relative values of combustion light and beam power (page 5, lines 1-20).

For claim 36, Oosterwijk teaches that wherein the actuator is a monolithic 2D actuator (page 1, lines 19-20) (7 as shown in fig.7). For claim 37, Oosterwijk teaches that wherein the actuator (7 as shown in fig.3) is connected to the optical element via a flexure (page 4, lines 1-12). For claim 39, Oosterwijk teaches wherein said actuator (7

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as shown in fig.13) uses piezoelectric actuators (7 as shown in fig.3) for displacing the element in two dimensions (page. 10, lines 1-30). For claim 40, Oosterwijk teaches that wherein the actuator is a thermoelectric actuator (page 4, lines 1-20). For claim 41, Oosterwijk teaches that means for changing scanning speed in order to provide gaps in between characters (page 5, lines 1-20). For claim 42, Oosterwijk teaches that a fiber laser incorporating a fiber for transmitting light onto an optical element (2 as shown in fig.3) for directing the light onto a reflector equipped with means for positioning said reflector in order to direct light onto a substrate to be marked (20 as shown in fig.1).

For claim 43, Oosterwijk teaches that an optical element (2 as shown in fig.3) positioning arrangement, comprising an optical element (2 as shown in fig.3), first and second actuators (7 as shown in fig.3), a first flexure (5 as shown in fig.3) located between said first actuator (7 as shown in fig.3) and said optical element (2 as shown in fig.3) and a second flexure (5 as shown in fig.3) located between said second actuator and said optical element, with flexures (5 as shown in fig.3) located between said actuators (7 as shown in fig.3) and said optical element (2 as shown in fig.3), whereby when said actuators (7 as shown in fig.3) are actuated any displacement generated is transmitted via said flexures (5 as shown in fig.3) to said optical element (2 as shown in fig.3), said first and second actuators being orthogonally disposed relative to each other (page.10, lines 1-30).

For claim 49, Oosterwijk teaches that an optical element (2 as shown in fig.3) positioning arrangement, comprising an optical element (2 as shown in fig.3), at least two actuators (7 as shown in fig.3) acting in the Z direction, at least two flexures (5 as

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shown in fig.3) located between at least two actuators (7 as shown in fig.3) and said optical element (2 as shown in fig.3), whereby when a first actuator (7 as shown in fig.3) is actuated, any displacement is transmitted via a flexure (5 as shown in fig.3) to said optical element (2 as shown in fig.3), said optical element (2 as shown in fig.3) is caused to swing; wherein only one flexure is located between its corresponding actuator (7 as shown in fig.3) and said optical element (2 as shown in fig.3). For claim 50, Oosterwijk teaches that wherein said optical element (2 as shown in fig.3) comprises a forward portion and a rearward portion, said optical element (2 as shown in fig.3) further comprising a counterweight portion extending rearwardly and surrounding said flexures (5 as shown in fig.3). However, Oosterwijk fails to teach first actuator displaces linearly in the X direction and said second actuator displaces linearly in the Y direction , provided that a second actuator's displacement differs from the displacement of said first actuator.

Shimizu teaches that first actuator displaces linearly in the X direction and said second actuator displaces linearly in the Y direction, provided that a second actuator's displacement differs from the displacement of said first actuator (col.3, lines 20-48). It would have been obvious to one ordinary skill in the art to modify Oosterwijk with actuators that operates in two different directions as taught by Shimizu in order to change the spacing between the reticule and the projection lens (Shimizu, col.3, lines 34-35).

Remarks

With the respect to applicant's argument that the new amended claims overcome the prior art reference of Oosterwijk et al (WO 98/47035) by having first and second flexures are between first and second actuators and optical element and adding that the actuator is a two dimensional actuator. However, the examiner respectfully disagree with applicant because first and second flexures or arm, which are element 5 as shown in figure 3 not element 4 as applicant discuss in the remarks, which capable to be flexible given broadest reasonable interpretation are placed between first and second actuators (element 7 as shown in figure 3) and optical element (element 2 as shown in figure 3), the new added reference Shimizu does teach of having an two dimensional actuator. Thus, it is clear that Applicant must submit amendments to the claims in order to distinguish over the prior art use in the rejection that discloses different features of Applicant's claim invention. Therefore, it is advised that, in order to further expedite the prosecution of the application in response to this action, Applicant should amend the base claims to describe in more narrow detail the true distinguishing features of Applicant's claim invention.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AYUB MAYE whose telephone number is (571)270-5037. The examiner can normally be reached on 9-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Ba Hoang can be reached on 571-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A.M.

/Ayub Maye/

01/15/10

Examiner, Art Unit 3742

/Geoffrey S Evans/

Primary Examiner, Art Unit 3742